

W I S C O N S I N

# Wildlife Phenology

2006 | calendar







# Wisconsin Wildlife Phenology

## 2006

**Phenology** is the study of living organisms' response to seasonal and climatic changes in the environment. Birds nesting or migrating, flowers blooming, and wildlife entering or emerging from hibernation are all examples of annual phenological events. This calendar identifies phenological events gathered from a variety of sources throughout the Midwest.

Our primary source of data comes from historical and current records from Aldo Leopold and his family in Sauk County, Wisconsin. Phenological events have been recorded at the Leopold Shack and family farm, a tradition begun in 1936 by Aldo Leopold, regarded by many as the father of wildlife ecology. Most of these recordings were taken in and around this landscape by Leopold from 1936-1947, and inspired Leopold's seminal work on conservation: *A Sand County Almanac*. We have also taken 26 years of data collected from 1974 through 2000 by Nina Leopold Bradley, and averaged the dates, thereby determining what date an event may occur. In addition, we have used four Aldo-Leopold-averaged dates taken from 1936 through 1947. These events occur much earlier now than they did during Leopold's lifetime. Several studies have shown a significant trend for an earlier occurrence of spring phenological events, suggesting that some species are changing behaviors in response to climate change. Some scientists believe species without phenological adaptability may experience greater stress or even extinction during times of extended climate change. The disparity of adaptation and change to warmer temperatures may have an effect on ecosystems across the globe.

Phenological events changing over time in response to climate change is one measure of the many pressures on land health. Those changes could be called symptoms of land illness. During the 1940s, Leopold wrote: "Conservation is a state of health in the land-organism. Health expresses the cooperation of the interdependent parts: soil, water, plants, animals, and people."

*"The disappearance of plant and animal species without visible causes despite efforts to protect them, and the irruption of others as pests, despite efforts to control them, must, in the absence of simpler explanations, be regarded as a symptoms of derangement in the land-organism."*

— Aldo Leopold

Indeed, the explosion of pest species, now tagged invasives and exotics, has become one of the most critical land health issues facing conservationists and landowners today. Therefore, this calendar includes monthly narratives describing twelve invasive and exotic species that may have been present even during Leopold's lifetime. Invasive plants alter the native ecosystems by aggressively competing with native species. Many invasive plants and animals evolved naturally somewhere else, hence the commonly used term exotic invasive species.

We now know invasive species spread by a variety of means, including seed dispersal through flowing water, wind, wildlife, and through human activities. Their introduction has been nearly all at the hand of humankind and at the demise of native species, as Leopold foresaw in 1941: "Worldwide commerce has brought a worldwide pooling of floras and faunas, partly by deliberate importation, partly by accidental dispersion as 'stowaways'." This biotic cocktail has been shaking at the same time that the axe of progress came down on the native food chains. . . . many species have melted away, while others have gotten out of bounds as pests."

Human activity remains at the forefront of invasive and exotic species management today. Humans still hold responsibility for the continued spread of invasives and their negative effects on land health. Roadside mow-

ing after wild parsnip, garlic mustard, spotted knapweed and other species have gone to seed is responsible for the spread and establishment of new populations, as is foot and vehicle traffic through infested areas. Boats, both commercial and recreational, continue to carry aquatic invasives to new waterways. Gypsy moths commonly establish new populations by hitching a ride from one site to another on camping equipment.

Managers and landowners have a wide variety of tools at their disposal to control invasive plants and animals, including prescribed fire, herbicides, mowing, and digging. The best control programs are those that integrate a variety of methods, monitor results, and adapt accordingly. Like most other aspects of managing for land health, an integrated approach is usually most efficient. Many of those methods are outlined in this calendar.

Invasive and exotic species have indeed proven Leopold's words correct: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." We hope the narratives in this calendar raise awareness and encourage landowners to actively engage in invasive species control and management.

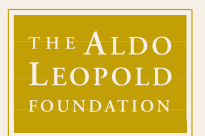


Aldo Leopold

*"From the beginnings of history, people have searched for order and meaning in these events, but only a few have discovered that keeping records enhances the pleasure of the search, and also the chance of finding order and meaning. These few are called phenologists."*

— Aldo Leopold

A Phenological Record for Sauk and Dane Counties, Wisconsin, 1935-1945



**The Aldo Leopold Foundation (ALF)** was founded in 1982 by the children of Aldo Leopold to promote harmony between people and the land and foster Leopold's vision of the Land Ethic. ALF is the definitive interpreter and advocate for Leopold's legacy. It has exclusive rights to *A Sand County Almanac* and other writings and photographs, is owner and caretaker of Leopold's Shack and family farm, and serves as a clearinghouse for information regarding Aldo Leopold, his work and ideas. For more information contact ALF at PO Box 77, Baraboo, WI, 53913, 608-355-0279, or on the web at

[www.aldoleopold.org](http://www.aldoleopold.org)

### Hopkins Law

The dates in this calendar correspond to data collected primarily in southern Wisconsin. To apply these dates to a different area, apply Hopkins Law, which states that the phenological events vary at the rate of 1 day for each 15 minutes of latitude, 1.25 days for each degree of longitude, and 1 day for each 100 feet of altitude. This means there is an approximate 22-day difference between Wisconsin's southern border with Illinois and the northern border with Michigan. There is also an approximate 10-day difference between the east and west portions of the state, due to Lake Michigan's cooling effect.

Cover photo: Common loon, Stephen Maxson.  
Photos this page: Scarlet tanager, Jack R. Bartholmai;  
White-tailed deer, Jeffrey J. Strobel; lake scene and  
Leopold photo courtesy of The Aldo Leopold Foundation.

### A note on dates


The phenology of reptiles and amphibians is highly dependent upon immediate conditions for reproduction. Wood frogs, for example, first emerge when night temperatures are over 50 degrees Fahrenheit. Therefore amphibian phenology is highly variable as well as difficult to research. Also, few people record any phenological data about reptiles and amphibians, other than frog call occurrence. This is mainly due to the tiny larval stages, secretive lifestyle, and the relative unpopularity of these animals in comparison to more visible species.





photos: White-tailed deer bucks, Bill Pielsticker; below: deer tracks in snow, Jeffrey J. Strobel

# January 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<div>1</div> <div>Sunrise 7:29 AM Sunset 4:33 PM</div> <div>New Year's Day</div>	<div>2</div> <div>Erect and clean barred owl boxes</div>	<div>3</div> <div>Female elk move to south-facing slopes for winter</div>	<div>4</div> <div>The Earth is Closest to the Sun (Perihelion)</div>	<div>5</div> <div>Black bear cubs being born in dens</div>	<div>6</div> <div>Cut-stump/basal bark chemical treatment of Honeysuckle and Black locust throughout winter</div>	<div>7</div> <div>Multiflora rose basal bark chemical treatment throughout January and February</div>
<div>8</div>	<div>9</div>	<div>10</div>	<div>11</div> <div>Aldo Leopold's Birthday (1887)</div>	<div>12</div>	<div>13</div>	<div>14</div> <div>☾ Full (Wolf) Moon</div>
<div>15</div>	<div>16</div> <div>Martin Luther King Jr. Day</div>	<div>17</div> <div>Black-capped chickadees begin spring courtship song</div>	<div>18</div>	<div>19</div>	<div>20</div>	<div>21</div>
<div>22</div>	<div>23</div> <div>Red fox begin mating</div>	<div>24</div> <div>Wolves begin mating</div>	<div>25</div> <div>Beaver begin mating</div>	<div>26</div> <div>Canada lynx begin mating</div>	<div>27</div>	<div>28</div> <div>Fox and Gray squirrels begin mating</div>
<div>29</div>	<div>30</div>	<div>31</div> <div>Great horned owls begin courtship activities</div>	<div>  <div> <div>December</div> <div>S M T W T F S</div> <div> <div>123</div> <div>45678910</div> <div>11121314151617</div> <div>18192021222324</div> <div>25262728293031</div> </div> <div>February</div> <div>S M T W T F S</div> <div> <div>1234</div> <div>567891011</div> <div>12131415161718</div> <div>19202122232425</div> <div>262728</div> </div> </div> </div>			

**Glossy Buckthorn** *Rhamnus frangula*  
**Common Buckthorn** *Rhamnus cathartica*

**Description:** Common and glossy buckthorns grow as small trees or shrubs reaching 10-25' in height; trunks can be up to 10" in diameter. Originally from Eurasia, they were brought to the Midwest as ornamentals.

*Common buckthorn*

Thorns located on the tips of the twigs. • Flowers are greenish yellow; four petals; blooms May through June. • Leaves are located opposite one another on the stem; dark green; shiny on upper surface; minute teeth on leave margins; veins curve toward leaf tips. • Black fruit found on female plants only; ripen August through September; may remain on the tree until following spring.

*Glossy buckthorn*

No thorns. • Flowers are pale yellow; five petals; blooms late May to first frost. • Leaves are typically alternate one another on the stem; upper surface is shiny; lower surface is duller; no teeth on leave margins; veins extend straight out from midrib then turn toward tip near edges. • Fruit found on female plant only progressively ripens from red to dark purple; develops early July through September.

Berries of both species have a laxative effect on birds, causing a loss of energy and dispersal of seed.

**Similar Species:** Black cherry *Prunus serotina*  
Chokecherry *Prunus virginiana*

**Impacts:** Buckthorn invades upland and lowland forests, fields, and bogs. Buckthorn aggressively displaces beneficial native vegetation, diminishing an affected site's value for almost all native wildlife and plant species.

**Control Methods:** Buckthorn re-sprouts vigorously and successful control requires routine cutting and spraying. Herbicides are the best option for large-scale buckthorn eradication. Foliar herbicide applications are most effective in late summer and fall, when most native plants are dormant, but buckthorn leaves remain green. Basal herbicide applications and those applied to freshly cut stumps from mid-spring through winter are also very effective.

**Use herbicides carefully! Read the entire pesticide label, follow mixing and application directions, and wear recommended protective gear and clothing.**

## Buckthorn

photo: Stephen L. Solheim, Wisconsin State Herbarium







photos: Sandhill cranes, Bill Pielsticker; below: leaves on ice, Jeff Shaw; Canada geese, Jeffrey J. Strobel

Sea lamprey

Petromyzon marinus

**Description:** Sea lampreys are jawless fish with eel-like bodies. They begin their complex life cycle as larvae, living in the sediments of the Great Lakes tributaries. Larvae transform into parasitic fish, migrating into the Great Lakes to feed on other fish. They reach adulthood at 1.5 years of age, at which time they stop feeding and migrate up tributaries to spawn and die. Sea lampreys originally occupied the North Atlantic Ocean. They invaded the Great Lakes through the modification of the St. Lawrence River for shipping.

Similar species:

- American Brook Lamprey *Lampetra appendix*
- Chestnut Lamprey *Ichthyomyzon castaneus*
- Northern Brook Lamprey *Ichthyomyzon fossor*
- Silver Lamprey *Ichthyomyzon unicuspis*



**Impacts:** In the Great Lakes, Sea lampreys have caused the collapse of economically valuable fish stocks, primarily lake trout and whitefish. They feed by extracting blood and other fluids with their tooth-filled, suction-cup-like mouths. Control efforts have helped some fish species recover, while others continue to struggle.

**Control methods:** Releasing specialized pesticides into tributaries is the primary Sea lamprey control method. Barriers in tributaries also deny access to spawning areas. Male lampreys caught in barrier traps are sterilized and released back into the population, increasing competition between sterilized and fertile males. Competition reduces successful reproduction with female lamprey. Currently, the use of pheromones with trapping has shown great promise.

Two Sea lampreys attached to a trout  
photo: Great Lakes Fishery Commission



# February 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																				
			1 Sunrise 7:13 AM Sunset 5:10 PM  Erect American kestrel boxes	2	3	4  Horned larks begin migrating north																																																																																				
	5  Erect and clean out Wood duck and Bluebird boxes	6	7  Coyotes begin mating	8	9  Northern cardinals begin spring songs	10	11																																																																																			
12	13  Full (Snow) Moon	14  Valentine's Day	15	16	17	18  Great horned owls begin nesting																																																																																				
19	20  Presidents' Day	21	22	23	24  Bobcats begin mating	25  Canada geese spring arrival																																																																																				
26  Mink begin mating	27	28			<div>January</div> <table><tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td></tr><tr><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td></tr><tr><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td></tr><tr><td>29</td><td>30</td><td>31</td><td></td><td></td><td></td><td></td></tr></table> <div>March</div> <table><tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr><tr><td></td><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td></tr><tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td></tr><tr><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td></tr><tr><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr></table>		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					S	M	T	W	T	F	S					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
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photos: Eastern wild turkeys, Bill Pielsticker; below: Eastern chipmunk, Jeffrey J. Strobel; wolf tracks, U.S. Fish & Wildlife Service

Gypsy moth  
*Lymantria dispar*

**Description:** Gypsy moths are 1 to 1.5 inches long. Males have brown wings with black, wavy markings, and the females have white wings with black markings. The female lays up to 1,000 eggs in a mass covered with the buff-colored hair from the moth's body.

The eggs hatch into larvae, or caterpillars. Long, stiff black hairs cover the larvae. Maturing larvae grow pairs of red and blue warts down the center of their backs. Only the larval stage of the moth's life cycle feeds, defoliating host trees. A native of Europe and Asia, the moth was introduced in Massachusetts in 1869. It continues to spread, and today it exists in more than 19 states.

**Similar species:**  
Eastern tent caterpillar *Malacosoma americanum*  
Fall webworm *Hyphantria cunea*  
Bagworm *Thyridopteryx ephemeraeformis*



**Impacts:** The gypsy moth larva feeds on the foliage of plants including trees, shrubs and vines, but prefers oak hardwood and aspen forests. Continued defoliation can kill trees, resulting in extensive economic, aesthetic and wildlife loss.

**Control methods:** Aerial application of insecticide made from a natural bacterium, *Bacillus thuringiensis*, is the safest and most effective tool for preventing wide-spread defoliation. It affects only caterpillars, and is harmless to all other animals and humans. Landowners can help by searching for and disposing of egg masses. Tying a burlap bag around the trunk of a tree will create a daytime hiding spot for the caterpillars, which can then be collected and destroyed.

Gypsy moth caterpillar  
photo: Andrea Diss



# March 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<div>February</div> <div>SMTWTFS</div> <div>1234567891011121314151617181920212223242526272829</div>	<div>April</div> <div>SMTWTFS</div> <div>1234567891011121314151617181920212223242526272829</div>	<div></div>	<div>1</div> <div>Sunrise 6:34 AM Sunset 5:47 PM</div> <div>Erect bat boxes; Begin pulling Spotted knapweed</div>	<div>2</div> <div>Snowshoe hares begin mating</div>	<div>3</div> <div>Maple sap flows when day temperatures are above 40 degrees</div>	<div>4</div> <div>Woodfrogs begin calling/ breeding the first day and night over 50 degrees</div>
<div>5</div> <div>Bald eagle migration begins</div>	<div>6</div>	<div>7</div> <div>Sandhill crane arrival begins</div>	<div>8</div> <div>Tom turkeys begin gobbling</div>	<div>9</div> <div>Fox and Gray squirrel young born</div>	<div>10</div> <div>American robin spring arrival</div>	<div>11</div> <div>Eastern bluebird spring arrival</div>
<div>12</div> <div>Red-winged blackbird spring arrival</div>	<div>13</div> <div>Begin mowing Leafy spurge</div>	<div>14</div> <div>Common grackle arrival; Eastern chipmunks emerge from hibernation Full (Worm) Moon</div>	<div>15</div> <div>Red fox pups being born</div>	<div>16</div> <div>Killdeer spring arrival</div>	<div>17</div> <div>Eastern meadowlark arrival</div>	<div>18</div> <div>Leopard frogs emerging from their winter burrows</div>
<div>19</div> <div>American woodcock first peent</div>	<div>20</div> <div>Pine marten young being born Vernal Equinox First Day of Spring</div>	<div>21</div> <div>Red-winged blackbird arrival (A. Leopold data 1936-47)</div>	<div>22</div> <div>Hooded merganser spring arrival Canada Goose arrival (A. Leopold data 1936-47)</div>	<div>23</div> <div>Wood duck spring arrival; Wolf pups being born</div>	<div>24</div> <div>Skunk cabbage begins blooming</div>	<div>25</div> <div>Ring-necked pheasants begin crowing</div>
<div>26</div> <div>Eastern phoebe spring arrival; salamanders and newts begin to emerge</div>	<div>27</div> <div>Great blue heron and Fox sparrow spring arrival</div>	<div>28</div> <div>Hermit thrush spring arrival; Chorus frogs and Spring peepers begin calling now through first week of April</div>	<div>29</div> <div>Mallards begin to arrive Lynx kits being born</div>	<div>30</div> <div>Opossum begin mating; Common garter snakes coming out of hibernation</div>	<div>31</div> <div>Canada geese begin laying eggs</div>	<div></div>





photos: White-crowned sparrow, Stephen Maxson; below: American bittern, U.S. Fish & Wildlife Service; Birdsfoot violet, Mike Engel

Garlic mustard

Alliaria petiolata

**Description:** Garlic mustard is a cool-season, biennial herb. The plant tolerates shade and grows in woodlands, roadsides, savannas, floodplains, edges of woods, and yards. Seeds start to germinate in early April. First-year plants appear as basal rosettes with green, scallop-edged leaves close to the ground. The rosettes remain green throughout the year, making winter identification possible. New leaves smell like garlic or onion when crushed. The second-year plant is 12 to 48 inches in height, with small white flowers blooming from May through early June. The fruit begins to ripen in mid-July.

**Similar species:** Garlic mustard is the only plant in Wisconsin’s woods that has white flowers in May. Immature plants can be confused with other rosette-forming species, especially Violets (*Viola sp.*), White avens (*Geum canadense*), Bitter cress, Sweet cress and toothworts (*Cardamine sp.*).



**Impacts:** Garlic mustard is a major threat to Wisconsin’s native plants and animals. It out-competes native woodland herbaceous species within 10 years. It displaces native plants by monopolizing light, nutrients, moisture, space, and soil. Animals that depend on native plant species for pollen, nectar, fruits, foliage, and seeds are deprived of these when garlic mustard invades.

**Control methods:** Hand pulling, stem cutting, prescribed fire, and herbicide application are all measures used to control garlic mustard. Long-term control efforts are necessary since seeds can remain dormant for 20 months before germination, and can remain viable for five years.

Garlic mustard  
photo: Becky Rudolph



April 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<div>March</div> <div>SMTWTFS</div> <div>12345678910111213141516171819202122232425262728293031</div>	<div>May</div> <div>SMTWTFS</div> <div>12345678910111213141516171819202122232425262728293031</div>					<div>1</div> <div>Sunrise 5:40 AM Sunset 6:24 PM</div> <div>Trees susceptible to Oak wilt from now until hard freeze; Belted kingfisher spring arrival</div>
<div>2</div> <div>Big brown bat spring arrival</div> <div>Daylight Savings Time Begins</div>	<div>3</div> <div>Tundra swan arrival</div>	<div>4</div> <div>Sigurd Olson's Birthday (1899)</div>	<div>5</div> <div>Begin spraying Garlic mustard</div>	<div>6</div> <div>Ruffed grouse begin drumming; Peak spring duck migration</div>	<div>7</div> <div>Bald eagles begin nesting</div> <div>Eastern phoebe arrival (A. Leopold data 1936-47)</div>	<div>8</div> <div>Tree swallow arrival</div>
<div>9</div> <div>Painted turtles are emerging</div>	<div>10</div> <div>Yellow-bellied sapsucker spring arrival; Pasque flower blooms</div>	<div>11</div> <div>Dig out Wild parsnip and Teasel rosettes</div>	<div>12</div> <div>Coyote pups and Mink kits being born</div>	<div>13</div> <div>Cowbird spring arrival</div> <div>Full (Pink) Moon</div>	<div>14</div> <div>Check bluebird boxes throughout nesting season</div> <div>Good Friday</div>	<div>15</div> <div>Black bears leave dens; Pickerel frogs begin calling</div>
<div>16</div> <div>Upland sandpipers are sighted; Dutchman's breeches blooms</div> <div>Easter Sunday</div>	<div>17</div> <div>Eastern cottontail rabbits are born</div>	<div>18</div> <div>Hen mallards begin nesting</div>	<div>19</div> <div>Pasque flower blooms (A. Leopold data 1936-47)</div>	<div>20</div> <div>White-tailed deer bucks growing antlers; Prairie smoke blooms</div>	<div>21</div> <div>Hognosed snakes are emerging</div> <div>John Muir's Birthday (1838)</div>	<div>22</div> <div>House wren spring arrival</div> <div>Marsh marigold blooms</div> <div>Earth Day</div>
<div>23</div> <div>Little brown bat spring arrival; Pull Garlic mustard</div> <div>30</div> <div>Goslings hatching</div>	<div>24</div> <div>Barn swallows return; Whooping cranes begin laying eggs</div>	<div>25</div> <div>American toads begin to sing</div>	<div>26</div> <div>Upper Trout Lake opens (Vilas Co.)</div> <div>John Audubon's Birthday (1785)</div>	<div>27</div> <div>Purple martins begin to arrive</div>	<div>28</div> <div>Bobwhite quail are mating</div> <div>Arbor Day</div>	<div>29</div> <div>Serviceberry blooms; Use propane torch on Garlic mustard seedlings</div>





photos: Northern spring peeper, Stephen Maxson; below: Jack pine needles, Mike Engel; Sandhill crane chick, U.S. Fish & Wildlife Service

Dame’s rocket

Hesperis matronalis

**Description:** This member of the mustard family has white, pink, or purple flowers with four petals, blooming from May until August on stalks 2 to 4 feet high. It is a prolific bloomer, producing large quantities of seed in long, narrow seedpods. The leaves are oblong, sharply toothed, and alternately arranged. Leaves become progressively smaller up the stem and are hairy on both sides. Dame’s rocket is native to Eurasia and was introduced to North America in the 1600s as an ornamental. This plant is found along roadsides, in moist and mesic woodlands, woodland edges, and in open areas.

**Similar species:** Garden phlox *Phlox paniculata*  
Woodland phlox *Phlox divaricata*

**Impacts:** Dame’s rocket competes with native species and threatens native plant communities. Many seed mixes labeled as wildflower blends contain the seeds of this species. This can lead many people to think it is a native wildflower, instead of an invasive species.

**Control Methods:** Avoid using seed mixes that contain Dame’s rocket. Removing plants or cutting flower heads before seeds mature is the best way to prevent dispersion. Selectively applying herbicides such as glyphosate to seedlings or conducting controlled burns can also effectively control Dame’s rocket.

Dame’s rocket  
photo: Joanne Kline



May 2006

Sunday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday



1

Sunrise 4:51 AM

Sunset 6:59 PM

Ring-necked pheasants nesting

Marsh Marigold blooms

(A. Leopold data 1936-47)

2

Whip-poor-will spring arrival; Large trillium blooms

3

Warbler spring migration begins; Catbird spring arrival; Blue-winged teal arrival

4

Birdsfoot violet blooms; Northern oriole arrival

5

Eastern gray tree frog and Cope's gray tree frog begin calling (1st week of May)

6

Wood thrush and Scarlet tanager spring arrival

7

Indigo bunting spring arrival ; Foliar spray Crown vetch

8

Wild gooseberry blooms; Ruby-throated humming-bird spring arrival

9

Eastern wood pewee spring arrival

10

Columbine blooms; Foliar spray Reed canary grass

11

Shooting stars bloom; Pull and bag Garlic mustard throughout May

12

Wild geranium blooms; Prothonotary warbler arrival; Gypsy moth spraying begins

13

Young eagles hatching; May apples bloom

International Migratory Bird Day

☉ Full ( Flower) Moon

14

Choke cherry blooms; Mallards hatching; Foliar spray Bird's foot trefoil

Mother's Day

15

Wild lupine blooms; Gypsy moth caterpillars beginning to defoliate trees

16

Sandhill crane chicks hatching

17

Jack-in-the pulpit blooms; Look for Morel mushrooms

18

Put out grape jelly and orange halves for orioles

19

Common loons begin nesting

20

Common nighthawk spring arrival

21

Lilacs blooming

22

Veeries begin singing

23

First fire flies can be seen; Whooping crane eggs hatching

24

Pink prairie phlox bloom; Wild asparagus emerging

25

American woodcock young hatching

26

Anemone blooms; Green frogs and Blanchard's cricket frogs begin calling at the end of May

27

White-tailed deer fawns are born now into June

Rachael Carson's Birthday (1907)

28

First flight of Karner blue butterfly adults emerge

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Wild iris blooms; Beaver kits being born

Memorial Day

30

Ruffed grouse chicks hatching

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Monarch butterfly arrival



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Wild parsnip

Pastinaca sativa

**Description:** Wild parsnip is a member of the parsley family, spending its first growing season as a rosette of leaves close to the ground. Usually during the second growing season, the plant sends up a single flower stalk that holds hundreds of yellow flowers in flat-topped, umbrella-like clusters, growing to more than 4 feet tall. It reproduces once during its lifetime, flowering in May through mid-July. It is found in open habitat – along roadsides, in abandoned fields, and prairies. Introduced as a food source from Europe in the 17th century, it escaped cultivation and is now common throughout the United States.

**Similar species:** Prairie parsley (*Polytaenia nuttallia*) is a native prairie species listed as threatened in Wisconsin.

**Impacts:** Wild parsnip is highly aggressive. It invades disturbed bare areas, especially those with calcareous soils. It isn't likely to invade well-established prairies, but it can become quite abundant on prairie edges and in disturbed patches within otherwise high quality prairies. It often out-competes native species, leading to a monoculture, destroying the habitat necessary for a healthy ecosystem. In addition, it produces a compound that causes severe blistering and discoloration on contact with human skin on sunny days, a condition known as photodermatitis.



**Control methods:** The best way to control wild parsnip is early detection and eradication. Established populations may require several years of control through cutting, pulling or herbicide application. Flowering plants should be chopped off just below ground level before the plants set seed. Avoid contacting plant tissues by wearing gloves, long pants and sleeves.

Wild parsnip  
photo: Jeffrey J. Strobel



photos: Regal fritillary butterfly, Mike Engel; below: White-tailed deer fawn, U.S. Fish & Wildlife Service; Wood duck chicks, Jack Bartholmai

# June 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<div>May</div> <div>SMTWTFSS</div> <div>123456</div> <div>78910111213</div> <div>14151617181920</div> <div>21222324252627</div> <div>28293031</div>	<div>July</div> <div>SMTWTFSS</div> <div>1</div> <div>2345678</div> <div>9101112131415</div> <div>16171819202122</div> <div>23<sup>23/20</sup>24<sup>24/21</sup>2526272829</div>			<div>1</div> <div>Sunrise 4:21 AM Sunset 7:30 PM</div> <div>Ring-necked pheasant broods appearing</div>	<div>2</div> <div>Black bears begin mating; Trumpeter swan eggs begin hatching</div>	<div>3</div> <div>Yellow hawkweed blooms; Mink frogs begin calling now through July</div>
<div>4</div> <div>Painted turtles begin laying eggs</div> <div>Gaylord Nelson's Birthday (1916)</div>	<div>5</div> <div>Wild quinine blooms; Continue mowing Leafy spurge</div>	<div>6</div> <div>Bullfrogs begin calling; Continue pulling Spotted knapweed</div>	<div>7</div> <div>Yarrow blooms</div>	<div>8</div> <div>Indian paintbrush blooms; Cut/mow Canada thistle</div>	<div>9</div> <div>Daisy fleabane blooms</div>	<div>10</div> <div>Foliar treatment of Buckthorn, Honeysuckle, Spotted knapweed, Garlic mustard and Black locust</div>
<div>11</div> <div>Harebell blooms</div> <div>○ Full (Strawberry) Moon</div>	<div>12</div>	<div>13</div>	<div>14</div> <div>Finish spraying and pulling Garlic mustard</div>	<div>15</div> <div>Black-eyed susan blooms</div>	<div>16</div> <div>Wild parsnip blooms</div>	<div>17</div> <div>Finish mowing Leafy spurge</div>
<div>18</div> <div>Flowering spurge blooms</div> <div>Father's Day</div>	<div>19</div>	<div>20</div> <div>Butterfly weed blooms</div>	<div>21</div> <div>Prairie smoke seed collection</div> <div>Summer Solstice First Day of Summer</div>	<div>22</div> <div>Goats rue and Common milkweed blooms; Wild lupine seed collection</div>	<div>23</div> <div>St. Johns wort and Compass plant bloom</div>	<div>24</div> <div>Blue-winged teal ducklings hatching</div>
<div>25</div> <div>Hoary vervain blooms</div>	<div>26</div> <div>Mow Wild parsnip in early flowering stage</div>	<div>27</div> <div>Marsh milkweed blooms</div>	<div>28</div> <div>Wild columbine seed collection</div>	<div>29</div> <div>Lead plant blooms</div>	<div>30</div> <div>Rattlesnake master blooms</div>	





photos: Red fox pups, Jack Bartholmai; below: Tree swallow, Jack Bartholmai; mushrooms, Jeff Shaw; Green-backed heron, Jeffrey J. Strobel

Purple loosestrife

Lythrum salicaria

**Description:** Purple loosestrife is a perennial wetland plant 3 to 7 feet high, having up to 50 bushy stems. It blooms from July to September, has showy purple flowers and is capable of producing more than 2 million seeds each year. Seeds can remain viable in the soil for many years. Marshes, stream edges, sedge meadows and wet prairies are optimal habitat. Purple loosestrife was introduced as a garden perennial from Europe during the 1800s, and also arrived in ship ballast. First detected in Wisconsin in the 1930s, it is now found in 70 of Wisconsin's 72 counties.

**Similar species:** Winged loosestrife *Lythrum alatum*  
Swamp loosestrife *Decodon verticillatur*

**Impacts:** Purple loosestrife aggressively invades wetlands, rapidly dominating native vegetation and degrading a healthy wetland's natural biodiversity. As the plants displace native vegetation, rare native plants are often the first species to disappear. Eventually, purple loosestrife can dominate entire wetlands. The plant also chokes waterways, impeding recreation.


**Control methods:** Wisconsin law prohibits selling, cultivating, or distributing purple loosestrife. Mechanical control by cutting, pulling, digging, drowning or chemical control are very effective on small pioneer infestations. Biological control has proven to be the most effective control of heavy infestations. The U.S. Fish and Wildlife Service, Wisconsin DNR and UW-Extension, together with private and public partner groups, have introduced insects such as the leaf-eating beetle (*Galerucella californiensis*), which has been released as a form of biocontrol and feeds exclusively on purple loosestrife.

Purple loosestrife

photo: Trempeleau National Wildlife Refuge, U.S. Fish & Wildlife Service



# July 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<div>June</div> <div>SMTWTFS</div> <div>123</div> <div>45678910</div> <div>11121314151617</div> <div>18192021222324</div> <div>252627282930</div>	<div>August</div> <div>SMTWTFS</div> <div>12345</div> <div>6789101112</div> <div>13141516171819</div> <div>20212223242526</div> <div>2728293031</div>				<div>1</div> <div>Sunrise 4:22 AM Sunset 7:41 PM</div> <div>Yellow coneflower blooms; June grass seed collection</div>	
<div>2</div> <div>Round-headed bushclover blooms</div>	<div>3</div> <div>White prairie clover blooms</div> <div>The Earth is Farthest from the Sun (Aphelion)</div>	<div>4</div> <div>Queen of the prairie and Mountain mint blooms</div> <div>Independence Day</div>	<div>5</div> <div>Purple coneflower blooms</div>	<div>6</div> <div>Canada goldenrod and Culver's root blooms</div>	<div>7</div> <div>Purple loosestrife and Cup plant blooms; Fall shorebird migration begins</div>	<div>8</div> <div>Painted turtles begin to hatch; cicadas can be heard</div>
<div>9</div> <div>Wild bergamot blooms; Mow Teasel in early flowering stage</div>	<div>10</div> <div>Purple prairie clover and Whorled milkweed blooms</div>	<div>11</div> <div>Prairie dock blooms; Common spiderwort seed collection</div> <div>Full (Buck) Moon</div>	<div>12</div> <div>Evening primrose blooms; Turkey hens molting</div>	<div>13</div> <div>Second flight of Karner blue butterfly begins</div>	<div>14</div> <div>Turks cap lily blooms; Mow Wild parsnip</div>	<div>15</div> <div>Shooting star seed collection</div>
<div>16</div> <div>Ironweed blooms</div>	<div>17</div> <div>Monkey flower blooms</div>	<div>18</div> <div>Sandhill crane chicks learn to fly</div>	<div>19</div>	<div>20</div>	<div>21</div> <div>Purple martins begin to gather</div>	<div>22</div> <div>Joe-pye weed blooms</div>
<div>23</div> <div>Nodding wild onion blooms</div>	<div>24</div>	<div>25</div> <div>Boneset blooms</div>	<div>26</div> <div>Big bluestem in pollen</div>	<div>27</div>	<div>28</div> <div>Spotted jewelweed blooms; Rough blazing star blooms</div>	<div>29</div> <div>Deer antler growth nearing peak size</div>





photos: Calico pennant dragonfly, Stephen Maxson; below: spider web, Jeff Shaw

# August 2006

## Spotted knapweed

*Centaurea maculosa*


**Description:** Spotted knapweed is a short-lived perennial or biennial plant with individual, small thistle-like, pinkish-purple flower heads located at the tip of each 2-to-4-foot stem. It blooms from late June through August, developing over 1,000 seeds per plant. Seeds are viable for seven years, and germinate throughout the growing season. Seedlings emerging in fall develop into a rosette of leaves that resume growth in spring. This plant was introduced in the 1890s, likely as a contaminant in alfalfa or hay seed from Europe and Asia.

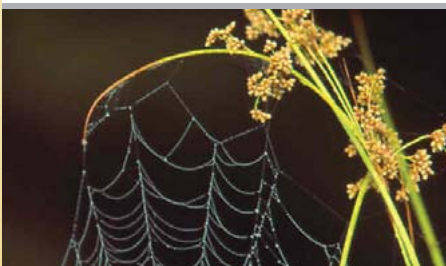
**Similar species:** Russian knapweed *Centaurea repens*  
Bachelor's button *Centaurea cyanus*  
White-flowered knapweed *Centaurea diffusa*

**Impacts:** Spotted knapweed produces a chemical that kills neighboring plants, thereby out-competing native vegetation. Until recently, it was presumed to inhabit only heavily disturbed areas such as roadside ditches, agricultural field margins, railroad beds, pipelines, and recently installed utility lines. It has now made its way into dry prairies, oak and pine barrens, lake dunes, and sandy ridges.

**Control methods:** The most effective control is early detection and prevention. Avoid spreading the seed through haying operations, mowing or vehicle undercarriage dispersal. Remove pioneering plants by digging or pulling the entire plant, including the root. Wear leather gloves, since pulling with bare hands is believed to cause illness. Controlled burning and herbicide application are also effective at eliminating spotted knapweed. Most recently, the use of insects as biological control is showing great promise in controlling spotted knapweed. A combination of control methods may be necessary to eliminate spotted knapweed.

Spotted knapweed  
photo: Jeffrey J. Strobel



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																				
		1 Sunrise 4:48 AM Sunset 7:19 PM  Cardinal flower blooms	2  Continue foliar spray applications on Buckthorn, Honeysuckle and Black locust	3  Cut and spray Purple loosestrife	4	5																																																																																				
	6	7  Cut/mow Canada thistle	8  Canada tick trefoil and False boneset seed collection	9  Gerardia blooms; Golden alexander seed collection ☉ Full (Sturgeon) Moon	10  Stiff goldenrod blooms	11	12																																																																																			
	13  Blackberries and Elderberries are ripening	14	15  Northern orioles begin second song; Begin herbicide application of Leafy spurge	16	17  Wild rice ripens	18  Great blue lobelia blooms; Side-oats grama seed collection	19  Turtle head blooms																																																																																			
	20  Thimbleweed and Prairie cinquefoil seed collection	21	22	23  Snowshoe hare mating ending	24  Sweet flag seed collection	25  Black-eyed susan seed collection	26																																																																																			
27  Bottle gentian begins blooming	28  Snapping turtle eggs hatching	29  Goats rue seed collection; Monarchs begin flight to Mexico	30  New Jersey tea and Bottlebrush grass seed collection	31  Horsemint and Common evening primrose seed collection	<div><div>July</div><table><tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr><tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td></tr><tr><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td></tr></table></div> <div><div>September</div><table><tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>1 2</td></tr><tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr><tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr><tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr></table></div>		S	M	T	W	T	F	S							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	S	M	T	W	T	F	S							1 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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photos: maple leaf and rain drops, Jeff Shaw; below: Red squirrel, Rachel Mockler; Great spangled fritillary butterfly on Prairie blazing star, Jeffrey J. Strobel

Leafy spurge

Euphoria esula

**Description:** Leafy spurge is a perennial plant that produces yellow-green flower clusters. Plants grow 2 to 3.5 feet tall and produce milky, white sap. Mature seed capsules open explosively, dispersing seed up to 15 feet from the plant. It also expands by sending up new shoots via its extensive root system. Roots can grow 15 feet deep and can spread 35 feet laterally. Seeds can remain viable in the soil for up to 8 years. Transported to the United States, possibly as a contaminant in agricultural seed in the early 1800s, leafy spurge was first recorded in Massachusetts in 1827. It spread quickly, reaching North Dakota within 80 years.

**Similar species:** Cypress spurge *Euphorbia cyparissias*



**Impacts:** Leafy spurge displaces native vegetation through shading, monopolizing available water and nutrients, and through the release of toxins that prevent the growth of other plants. The milky white sap of the plant can cause weakness in cattle and excessive amounts can sometimes cause death. It can also cause mild to severe skin and eye irritations in humans.

**Control Methods:** Leafy spurge is considered a noxious weed under Wisconsin law, meaning landowners must attempt to eliminate it. It is extremely difficult to control. Mechanical removal is difficult due the extensive, deep roots. Herbicides can be effective, but multiple applications are required. Biological control may be the best hope for control. The flea beetle (*Aphthona*) feeds only on leafy spurge, both on the root system as a larva and on the plant itself in the adult stage.

Leafy spurge  
photo: Becky Rudolph



# September 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<div>August</div> <div>SMTWTFS</div> <div>12345678910111213141516171819202122232425262728293031</div>	<div>October</div> <div>SMTWTFS</div> <div>12345678910111213141516171819202122232425262728293031</div>				1 <div>Sunrise 5:22 AM Sunset 6:32 PM</div>	2 <div>Clean out Purple martin boxes and cover holes</div>
3 <div>New England aster blooms</div>	4 <div>Wool grass seed collection <b>Labor Day</b></div>	5 <div>Ruffed grouse broods begin to disperse</div>	6 <div>Fringed gentian blooms; Wild quinine seed collection</div>	7 <div>Ruby throated humming-birds begin southern migration <b>Full (Harvest) Moon</b></div>	8 <div>Flowering spurge seed collection; Cut/mow Canada thistle</div>	9 <div>Finish spraying Leafy spurge</div>
10	11 <div>White-tailed bucks begin to shed velvet</div>	12	13 <div>Prairie dock and Culver's root seed collection</div>	14 <div>Purple prairie clover seed collection</div>	15 <div>Stiff gentian blooms</div>	16 <div>Migrating Canada geese begin to arrive</div>
17	18 <div>Hawks and Blue-winged teal are migrating</div>	19 <div>Rattlesnake master and Pasture rose seed collection</div>	20 <div>Prairie blazing star seed collection</div>	21 <div>Trumpeter swan cygnets learning to fly</div>	22 <div><b>Autumnal Equinox First Day of Fall</b></div>	23 <div>Whooping cranes begin migrating south</div>
24 <div>Leaves are turning colors</div>	25 <div>Canvasbacks begin southern migration</div>	26 <div>White wild indigo and Round-headed bushclover seed collection</div>	27 <div>Wild bergamot, Leadplant and Swamp milkweed seed collection</div>	28	29 <div>Finish foliar applications of Black locust</div>	30 <div>Sawtooth sunflower, Switchgrass, and Indian grass seed collection</div>





photos: American woodcock, Stephen Maxson; below: Common loon, Jeff Shaw

Reed canary grass

Phalaris arundinacea L.

**Description:** Reed canary grass is a perennial, cool-season grass with roots, or rhizomes, producing multiple upright stems growing from 2 to 9 feet high with thin, flat leaf blades. The shiny, brown, smooth seed is oval-shaped. It establishes from seed and broken rhizome segments. A dense mat of interlaced rhizomes develops to a depth of 4 to 6 inches below ground. Both Eurasian and native species of reed canary grass exist in the United States. Most professionals believe the majority of today's reed canary grass comes from the Eurasian species, selected for its vigor. It has been planted throughout the country since the 1800s for forage and erosion control.

**Similar species:** Orchard grass *Dactylis glomerata*  
Canada wild rye *Elymus canadensis*  
Bluejoint grass *Calamagrostis canadensis*


**Impacts:** Reed canary grass threatens native plants in wet prairies, sedge meadows and other wetland plant communities throughout Wisconsin. Over time, it forms large, monotypic stands with thick root mats, which form a barrier to native plants and are little use to wildlife. It produces poor nesting cover since its weak stems cause it to lie flat in spring.

**Control methods:** Eliminating reed canary grass is very difficult. A combination of tillage and grass-specific herbicides may offer the best potential for control. Tilling helps break the rhizomes, weakening the plants. Generally, chemical control is most effective in late summer and fall. Excavating to a 6-to-8-inch depth can eliminate both the existing grass and seed bank, but is only practical for areas less than 5 acres. Controlled burning in late spring is effective at reducing seed and removing existing plant litter. Covering small areas with landscape fabric or black plastic for one growing season is effective.

Reed canary grass  
photo: Art Kitchen



# October 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																				
1  Sunrise 5:55 AM Sunset 5:39 PM  Tamarack trees are turning golden; Bottle gentian seed collection	2   Little brown bat departure; Dark-eyed junco fall arrival	3   First frost	4   Begin cutting and chemically treating woody vegetation stumps	5   Stiff goldenrod, Ironweed, Canada wild rye and Yellow coneflower seed collection	6   Compass plant seed collection	7   Big bluestem and Blue vervain seed collection  Full (Hunter's) Moon																																																																																				
8  White-tailed buck making scrapes and rubs through November	9  Purple finch arrival  Columbus Day	10   Rough blazing star seed collection	11   	12   Eastern prickly pear cactus, Showy goldenrod and Old field goldenrod seed collection	13   Prairie dock seed collection; Finish foliar application of woody vegetation	14   Frogs begin to burrow into mud; Wood ducks migrating south																																																																																				
15  Last Eastern phoebe sighting; Sky blue aster and Little bluestem seed collection	16   	17   	18   Red-winged blackbird gather for departure	19   Redhead ducks migrating south	20   	21   Ding Darling's Birthday (1876)																																																																																				
22   	23   	24   	25   White-tailed bucks begin rut	26   White-throated sparrow departure	27   Canvasback peak fall migration  Teddy Roosevelt's Birthday (1858)	28   																																																																																				
29  Black bears begin to den  Daylight Savings Time Ends	30   	31   Halloween			<div>September</div> <table><tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr><tr><td></td><td></td><td></td><td></td><td>1</td><td>2</td><td></td></tr><tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr><tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr><tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr></table>	S	M	T	W	T	F	S					1	2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	<div>November</div> <table><tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr><tr><td></td><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td></tr><tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td></tr><tr><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td></tr><tr><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td></td></tr></table>	S	M	T	W	T	F	S					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
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photos: Black bear, Michele Windsor; below: Ruffed grouse, Jeff Shaw

Eurasian watermilfoil

Myriophyllum spicatum

**Description:** Eurasian watermilfoil is an aquatic plant found in ponds, lakes and rivers. It is a perennial, submersed plant with feather-like leaves that are usually whorled on stems that branch near the surface, forming dense mats. Flowers are produced where the leaf meets the stem or on emergent spikes. It is a vigorous plant, spreading primarily by stem fragments. Native to Eurasia and Africa, Eurasian watermilfoil was accidentally introduced from Europe and reported in the Chesapeake Bay area as early as 1848. It spread to the Midwest by the 1950s, quickly becoming a problem.

**Similar species:**  
Northern watermilfoil *Myriophyllum sibiricum* Komarov


**Impacts:** Dense mats formed by Eurasian watermilfoil affect boating and fishing, and increase the risk of “swimmers itch.” Infestations also result in lower oxygen levels, water temperature, and quality. It often grows so dense that native plants can no longer survive.

**Control methods:** Removing any vegetation attached to boats or trailers can help prevent the spread of Eurasian watermilfoil stem fragments between water bodies. Occasional cutting by mechanical harvesters is the most common method for control in Wisconsin. While harvesting may temporarily clear out areas, it also removes beneficial aquatic vegetation. Harvesters also create stem fragments, contributing to dispersal. Herbicide treatment can be more effective than harvesting, but can also disrupt aquatic ecosystems. There is hope for biological control as the native Milfoil weevil (*Eurhychiopsis lecontei*) feeds on Eurasian watermilfoil. Twelve Wisconsin lakes are part of a two-year research project studying the weevils' effectiveness. The plant pathogenic fungus (*Mycoleptidiscus terrestris*) is also being researched as a biological control tool.

Eurasian watermilfoil  
photo: Wisconsin Department of Natural Resources



# November 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 <div>Sunrise 6:32 AM Sunset 4:50 PM</div>	2	3	4
	5	6	7 <div>Peak mallard and scaup fall migration</div>	8	9	10
11 <div>Full (Beaver) Moon</div>	12 <div>Begin basal bark chemical applications for Black locust</div>	13 <div>Last of Sandhill cranes migrating south</div>	14	15	16	17
18	19 <div>Ring-necked pheasants begin to winter in cattails</div>	20	21	22	23 <div>Thanksgiving</div>	24
25	26	27	28	29	30	<div>October</div> <div>SMTWTFSS</div> <div>1234567</div> <div>891011121314</div> <div>15161718192021</div> <div>22232425262728</div> <div>293031</div>
						<div>December</div> <div>SMTWTFSS</div> <div></div> <div>12</div> <div>3456789</div> <div>10111213141516</div> <div>17181920212223</div> <div>24252627282930</div>





photos: Short-tailed weasel, Nathan Tucker; below: beaver-gnawed branches, Jeffrey J. Strobel

Zebra mussels

Dreissena polymorpha

**Description:** Zebra mussels are small, fingernail-sized mussels with black and yellowish zebra-like striped shells. They start life as free-swimming larvae called veligers. Veligers remain suspended in the water column for one to five weeks, and then sink, attaching to stable surfaces like rocks, aquatic plants, or boat hulls where they grow and reproduce.

This Caspian Sea native was first documented in the U.S. at Lake St. Clair in 1988. During the late 1980s, transoceanic ships discharged ballast water into Lake St. Clair. Zebra mussels have since been spreading through inland freshwaters.

**Similar species:** Quagga mussel *Dreissena bugensis*  
Dark falsemussel *Mytilopsis leucophaeata*

**Impacts:** One zebra mussel filters up to one quart of water a day, removing beneficial phytoplankton and zooplankton, breaking the food chain for smaller fish and other animals. Zebra mussels attach to the shells of native mussels in great masses, effectively smothering them. They also plug water intakes of water treatment facilities, power plants, and irrigation systems.

Wisconsin Electric Power Company reports spending \$1.2 million each year attempting to control zebra mussels in Lake Michigan power plants.

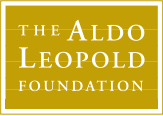
**Control methods:** Prevention is best, including removing all aquatic plants from boats and draining water from live wells, motors and bilge pumps. Diving ducks and some fish eat small zebra mussels, but not enough to control populations.

Zebra mussels  
photo: Great Lakes Sea Grant Network



# December 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<div>November</div> <div>SMTWTFSS</div> <div>123456789101112131415161718192021222324252627282930</div>	<div>January</div> <div>SMTWTFSS</div> <div>12345678910111213141516171819202122232425262728293031</div>			1 <div>Sunrise 7:09 AM Sunset 4:24 PM</div>	2 <div>Freeze line reaches the WI/IL border</div>	White-tailed jackrabbits feeding on haystacks
3	4	5 <div>Look for beaver prints and tail tracks in the snow</div> <div>Full (Cold) Moon</div>	6	7	8 <div>Upper Trout Lake average freeze date (Vilas Co. '62-'72)</div>	9
10	11	12	13	14	15 <div>Look for mink slides along creeks and waterways</div>	16
17	18 <div>Look for otter slides along creeks and waterways</div>	19	20 <div>Lake Mendota average freeze date (Dane Co.)</div>	21 <div>Winter Solstice First Day of Winter</div>	22	23 <div>Look for snow fleas (springtails) on the snow near dead vegetation</div>
24 <div>31</div>	25 <div>Christmas</div>	26	27 <div>Take part in the Christmas Bird Count</div>	28 <div>Endangered Species Act Passed (1973)</div>	29 <div>White-tailed deer bucks begin to shed antlers</div>	30





## Landowner assistance available with the U.S. Fish and Wildlife Service (USFWS)

The Partners for Fish and Wildlife Program assists private landowners in restoring wetlands, grasslands, oak savannas, pine and oak barrens, streams and endangered species habitat. Financial and/or technical assistance is offered to private landowners through voluntary cooperative agreements. Under these cooperative agreements, landowners agree to maintain the restored lands for the life of the agreement (10-year minimum). Landowners also retain full control of their land.

**For more information on the Partners for Fish and Wildlife Program, visit** [www.fws.gov/midwest/Partners](http://www.fws.gov/midwest/Partners)

The National Wildlife Refuge System, managed by the U.S. Fish and Wildlife Service, is the only system of federal lands dedicated entirely to wildlife. The Refuge System consists of over 600 refuges, covering over 96 million acres. These protected lands provide habitat for more than 200 species of fish and nearly 500 other animal species. Among the hundreds of wild species that call wildlife refuges home are 250 threatened or endangered plants and animals. More than 39 million people visit the wildlife refuges each year.

**For more information about the U.S. Fish and Wildlife Service and the National Refuge System, visit** [www.fws.gov](http://www.fws.gov)

## Landowner assistance available with the USDA Natural Resources Conservation Service (NRCS)

### *Wetlands Reserve Program (WRP)*

WRP is a voluntary program to help private landowners restore wetlands previously altered for agricultural use. The program provides assistance for wetland restoration and wildlife habitat establishment on lands that have been owned for one year and can be restored to wetland conditions. Landowners may restore wetlands with permanent easements, 30-year easements or 10-year contracts. One-time easement payments are based on the lesser of: 1) an appraisal based on pre-easement land value minus the post-easement land value, 2) the geographic rate based on agricultural county caps, or 3) the landowner offer. Permanent easements receive 100% of the payment and 100% of the restoration costs; 30-year easements receive 75% of the land payment and 75% of the restoration costs; 10-year contracts pay for 75% of the restoration only. Permanent or 30-year easements are recorded with the property deed. Public access to restored lands is not required.

### *Wildlife Habitat Incentive Program (WHIP)*

The purpose of WHIP is to develop or improve fish and wildlife habitat on private and public land through prairie and savanna restoration and establishment, seeding native grasses, fencing, in-stream fish structures, livestock exclusion and related practices. Almost any type of land is eligible, including agricultural and non-agricultural land, woodlots, pastures and streambanks. Applications are funded based on statewide ranking. Landowner contracts are 5-10 years in length. Cost share assistance is available for habitat development practices up to 75% or restoration costs and to a maximum of \$10,000.

**\*Note: WRP and WHIP are competitive programs with only the most environmentally beneficial projects selected for funding.**

### *Conservation Reserve Program and Conservation Reserve Enhancement Program (CRP and CREP)*

CRP and CREP assist landowners or operators who set aside cropland (or pasture that is adjacent to streams) with annual rental payments throughout the contract period. Continuous CRP is an ongoing non-competitive sign up which includes practices such as grass buffers, windbreaks, waterways, wetland restoration. Cost sharing for practice installation is provided as well as other incentives. Whole field enrollment is available during sign-up periods and include practices such as tree planting, grass cover, prairie and oak savanna establishment. Land eligibility varies by soil type and crop history. Contracts last for 10-15 years and are transferable with change in ownership. CRP and CREP are Farm Service Agency programs with NRCS providing technical assistance.

### *Environmental Quality Incentive Program (EQIP)*

EQIP provides technical and financial assistance to agricultural producers for conservation practices that protect soil and water quality. Many practices are eligible for cost-sharing. Agricultural producers on agricultural lands are eligible. Projects are selected based on their environmental value. Contracts last 1-10 years. Producers may be eligible for up to 75% cost sharing, up to \$450,000 per producer for the life of the federal Farm Bill.

### *Conservation Security Program (CSP)*

CSP rewards good land stewardship by providing payments to farms who meet the highest standards of conservation and environmental management on their farm operations. Eligible landowners in selected watersheds may receive annual payments based on their level of stewardship, through a 5-10 year contract.

**For more information about these and other NRCS conservation programs, visit** [www.wi.nrcs.usda.gov](http://www.wi.nrcs.usda.gov)



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